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ATARI BAY AREA COMPUTER USERS SOCIETY

1987

## BONUS DOUBLE ISSUE

### PRESIDENT'S MESSAGE

**ERRATA:** In expressing thanks to the many who worked at The World of Atari Fair in Santa Clara in June, I left out some of the key players: Alan Steele, who helped setup on Thursday (despite a leaky valve cover gasket that must have left a Hansel & Gretel trail from SF to SC) and who returned for the day on Sat; and Duke Campbell (who also offered everyone a free introductory period on Huttonline at our July meeting, --Huttonline is an online securities account and research service).

**A BASIC FOR THE REST OF US?** C haters, pascalophobes, nostalgia buffs, all who sinned joyously with GOTOS and learned to love  $X=X+1$ , there is now a fast AND interactive BASIC for the ST at a price we can all afford. From DTACK Grounded Inc. comes DBASIC, an incrementally compiled language written in 68000 assembly lang. which returns errors after the entry of each line, yet beats the pants off other interactive BASICs and runs nearly as fast as compiled BASICs (faster on two benchmarks: determining the first 1651 prime nos., and outputting 1000 70 char. strings to the screen) and even makes a creditable showing against Megamax and Mark Williams Cs (BYTE magazine's May '85 benchmark and a floating point test show it to be 3 times faster). It uses double precision floating point math (no more ALMOST right results) yet clips right along. These tests were not run by DTACK Grounded but by a competitor, LDW, whose BASIC was faster on 4 of the six benchmarks but which is compiled, not interactive. The best part is that DTACK is distributing the language FREE to all ATARI user groups, which are to distribute them in any way they see fit. We received forty 280 page manuals, master disk and labels to affix to copies and will sell them (disk and manual) for the usual PD disk price of \$5.00 at our August 1, meeting. Caution: None of our members have yet had a chance to use the language so who knows what insects lurk within. But anyone who goes to the trouble and expense to distribute thousands of free manuals and hundreds of free disks has an incentive to update and support. DTACK claims that they will make their money selling manuals to the 190,000+ ST owners who do not get one from this deal. But, of course, no one will order one unless we find the language useful, and start programming in it. We are unpaid beta testers, but so what else is new. The price is right, at least.

**MAGNIFICENT MIDI:** At the July meeting, thanks to our Technical Director, George Gaboury, a bewildering maze of cables connecting a 130XE system, a printer, a 520 ST, a Yamaha DX-7 synthesizer, an Ensoniq Mirage sampling synth, a JBL projection video system, a custom stereo sound system, brought us magnificent sights and m-e-l-l-o-w sounds. The high point was a jam session bringing together two musicians, our own Bob Johns (his Ensoniq) and Jim Purcell (his DX-7). Starting off with Honeysuckle Rose, they swung through a series of old favorites with all the notes dancing above our heads on the overhead screen thanks to the Midi Play software. Charles Cherry contributed a mixer (How many great newsletter editors have resources like that?) **Ralph Goldheim of 380 Systems at 18730 Oxnard St, Tarzana CA 91356, graciously provided a Mini Patcher & Midi**

Merger which effortlessly linked the MIDI systems together. MIDI musicians should make a special trip to Tarzana to check them out.

### Meetings

Next Meeting: Sat., AUGUST 1, 1987

September Meeting: 2nd Sat. Sept 12, 1987  
(After Labor Day)

800/XL/XE 10:00 - 1:00 ST 12:00 - 3:00

19th Ave. Diner, 19th Ave & Lincoln, San Francisco

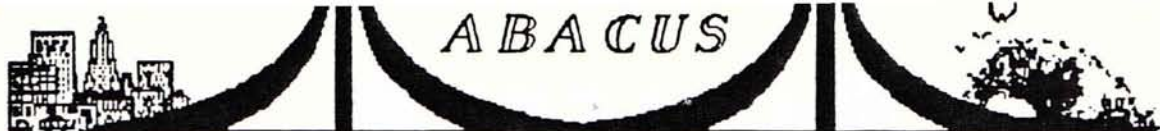
Please don't park in the parking lot

**NEXT MEETING--AUGUST 1:** Sandi Austin and others from Uncle Jack's Perpetual Start-up Shop & Asylum will join us above the 19th Avenue Diner for show and tell. We are confident that by that time some of the goodies they showed at the Fair will be on the shelves and that on the way home from the meeting we can pick up an XEP80 board and AtariWriter+ 80 or drop off an ST motherboard for blitter & ROM upgrade. What do you mean, there's an Atari user born every minute? We're just optimist.

**ABACUS PLANS:** Your officers, never satisfied with merely buying off terrorists, undermining Congressional mandates, and turning a million or two in arms profits, are always on the lookout for the BIG scam. We have decided against soliciting millions from poor and honest folks to aircondition our dog houses a buy a mansion or two. Its been done. So we are going to do what no one else can do: (a little fanfare music--MIDI, of course) an upgraded ABACUS BBS and an all laser printed ABACUS Newsletter. Our long suffering SYSOP, Ed Van Pelt, (known to his family and friends as Squint after all the five hour sessions staring at the screen as he restarts after a crash). We have his epitaph all written: "He stayed with BBS Construction Set to the bitter end." Warren Lorente, our Treasurer, delivered a spanking new color 520ST to him and as soon as Ed finds BBS software he can live with a new ABACUS BBS will be up and running. It will support both 8 Bit and ST--no compromises on that. Ed needs remote SYSOPS to help maintain both boards and to make sure we have first rate and regularly updated downloads and news available. You can do it from your home--no travel required. If interested, call Ed at 333-9845. Now that our able ANTIC author and newsletter editor, Charles Cherry, has an ST he is ready to get in on the ground floor of desktop publishing--that is where they keep the heavy fonts. Charles is preparing to whip his finely honed team of Rob Re and Jay London into shape and is anxious to have some more backsides to whip or hone or whatever is right--and decent. In particular we need an 8-bit editor. You will have access to all the other user group newsletters which we receive from which you may borrow good articles, programs, etc. It would be good to contribute a thing or two of your own but that is not a requirement. Call Charles at 333-9519.

- Bill Zinn





## WHY DON'T WOMEN LIKE COMPUTERS?

by Dave Small      Current Notes

All right, I'll do it. I'll ask a completely unsocial, very possibly sexist and chauvinist question.

Why don't women like computers?

Now, I realize that this leaves me open to charges of sexism and so on. But that doesn't change my curiosity.

At the local user groups I attend, there are usually about 30 males and 1 (or no) females. At the bigger user groups, there's may be two — usually someone's daughter and someone's wife with a Patiently Suffering Expression. (You know that expression. It's something like the expression men have while trying on clothes, shopping for antiques, or making house payments.)

Okay, why is this?

Now, let's toss out, right now, the stories we all know that can be used to derail the question. Yes, I've met a few women in data processing departments. Yes, I know women can be just as good at programming. Yes, yes, yes. There *are* exceptions.

Which only proves the point, because we all know they are exceptions. Why that obvious, intense 30:1 ratio?

I put the question to my wife, Sandy. As "David and Sandy Small", we wrote a number of computer columns together, and did a lot of programming. She has a Computer Sci degree.

She didn't know. What she does know is she's tired of computers, burned out on them. She told me what she doesn't understand is why I'm still interested in them after all this time. Or, as she put it, "The question is not why women aren't interested in computers. The question is why men are interested in them to the degree they are."

Hehehe.

I asked "Barb" (a pseudonym), the woman who helps us out at the Data Pacific office. We were sitting at the Denver Atari Expo, watching lots of men and an occasional Suffering Wife in Tow walk by.

"Why don't women like computers?", I said.

She looked around to make sure no one was listening, especially no Madder Feminists. Then, she said, "Well, I think it's just different sides of the brain. Women don't like math as much as men do. I think women are more attuned to feelings and emotions, that computers don't have. I think computers are boring."

Mind you, if *I* said that in this column, they'd find my tarred and feathered body in the morning, my hands tied behind my back with a bra strap.

Which leaves me understanding exactly nothing.

One more try: Cassie Stahl. She used to help with technical support at Atari. Okay, Cassie, why don't women like computers?

"I don't know. Maybe it's societal conditioning. Women aren't supposed to like them. But I really don't know if that's it at all. My friends who are women aren't interested in them."

Zero for three.

Does anyone know?

I do know that if someone can overcome being shouted down, and study this phenomenon, they might have a real handle on some of the differences between men and women. It might provide some badly needed insight. Despite the screams of "discrimination", there are lots of openings for women in DP departments across the country, and openings than applicants. Just ask any personnel person who's trying to keep the Affirmative Action people off their case by hiring women. "You! You're female! You have a degree in... I don't care! Do you know 'C'? Great, you're hired!"

I also read the many intelligently written appeals by women looking for Mr. Right. They complain of the few number of single men available, of how bad the bar scene is, and so on. "I never meet any bright men, who can have an intelligent conversation".

Have any of them thought of going to the local user's group meeting, where it's guaranteed they will receive a great deal of attention? Just a thought. Anything female coming to a user group, asking "Can someone answer a question for me", would receive more interest than Cybill Shepherd.

Me, I still don't know. I see the phenomenon. It's stayed the same since 1976, when I went to college in Computer Sci, and there were about four women in the whole department. (I married one of them).

So, if you're looking for an answer in this column, I haven't got one. I do, however, have the question.

Maybe women have a saner view of computers. As former head of Atari's User Group Support told me: "I never go to user's groups. Computers are tools, like



reprinted from MACE, February 87, Modesto Atari Computer Club, Modesto, CA

toasters. When was the last time you went to a toaster user group?"

Could be.

If you'd care to write me, expressing your opinion, I'd really like to hear it, especially the female point of view. Perhaps I can gather some ideas and do a future column on what readers think. (Let me know if you need to be anonymous and if I can quote you.)

Then again, maybe only men out there will read this, in which case, I'll stay puzzled.

Here's a mail drop:

Dave Small,  
9678-B E Arapahoe, #133,  
Englewood, CO 80112.

Thanks — Dave Small



## Laws of Computing

### From Bytown Bytes

When you get to the point where you really understand your computer system, it's probably obsolete.

As soon as you find that your microcomputer is easy to use, add some peripherals you don't understand how to use.

Whatever happens, behave like you meant it to happen.

Experience is something you don't get until just after you need it the most.

The time it takes to fix the error in your spreadsheet is inversely proportional to the time it took to do the damage in the first place.

People always remember the last mistake you made.

He who hesitates is probably smart.

The less a computer peripheral costs, the more it costs to fix.

Confidence is the feeling you get just before you fully understand the problem.

It's only when you need to knock on wood when you realize that the whole world is made up of aluminum and plastic.

You always find the information that you need on the page of the manual you look at last.

The first place to look for information is in the section you least expect to find it.

You know you have a REAL crisis on your hands when you can't say "Let's forget the whole thing".





## NEWSLETTER CONSTRUCTION SET

by Charles Cherry

### THE ECONOMICS OF THE NEWSLETTER

This is a SUPER BONUS DOUBLE issue. And no, we are not catching up with missed issues in the past. I just had a lot of stuff I thought you might be interested in. As we move into the dog days of August, when the computer industry comes to a standstill, I thought you might like a little extra reading matter about our favorite subject. The normal newsletter is 10 pages long, 5 pages both sides. It is 10 pages long because any more cost another stamp. (Actually, we can sometimes squeeze 12 pages past the postal scale. I think it has to do with how dry the paper is. I live in the middle of that permanent fog bank in Daly City, so we stop at 10.

It costs 3.9 cents a page to print the newsletter. That's 39 cents for each issue. Add the 22 cents for the stamp, and you're at 61 cents. We also send out about 70 copies to other user groups around the world. After figuring in that, your copy costs about 90 cents. I figure we owe you (or you owe yourself, since this is a user group and you are it) a couple of bonuses a year. Hence this fat issue. It cost about \$1.78 to get it to you.

### YOUR FIRST XL/XE MODIFICATION

You all know that I love to cut up my computers and solder in all kinds of weird things. To me the word hacker refers to violent physical activity. I know that not all of you feel the same way. You like computers that work. Well I've found the perfect modification for XL and XE owners to get their feet wet.

I was reading a letter to the Editor of Current Notes (the newsletter of the Washington (D.C.) area users) from Roger Tolbert of Ozark, Alabama. It seems he grafted a 1200XL keyboard into an 800XL and discovered the 800XL operating system supports the 1200XL function keys! "So what," I hear you say. "No one ever wrote any software for the function keys." True. But the function keys do some pretty interesting things all by themselves. Like controlling the cursor. No more holding down the Control key. I immediately opened my brother's 256XL (formerly an 800XL), drilled four holes in it for push buttons, and wired them in.

It works like a charm. This is something I have to have. Guess what. It works on my 320XE (formerly a 130XE) too. Here's how you do it.

Get four small normally open push button momentary switches (Radio Shack 275-1547 - \$2.50 for 5). Decide where you want to put them. I put them in a diamond shape above the CONSOL keys on my brother's XL. I put them on the side of my XE. Open up your computer and take off the metal RF shield. Install the buttons. Find U24 and U25 on the XL. I don't know the chip numbers on the XE, but they are easy to find.

They are 16 pin chips and are near where the keyboard connector attached to the motherboard. They should say 4051 somewhere on them. Use the one closest to the front of the computer as U25 and the one behind it as U24. Wire the buttons as follows:

| Button | U24 | U25 |
|--------|-----|-----|
| Up     | 1   | 4   |
| Down   | 12  | 4   |
| Left   | 1   | 5   |
| Right  | 12  | 5   |

(each button connects to both chips. One contact connects to the indicated pin on one chip, the other contact connects to the indicated pin on the other chip.)

This is a real easy project and the rewards are great. I encourage you to try it. Give me a call if you need help. Below is a section of page 202 from "Mapping The Atari" by Ian Chadwick. It explains the functions of the function keys.

#### 96,97

#### 60,61

#### FKDEF

The 1200XL has four redefinable function keys. FKDEF points (LSB/MSB) to their definition table—an eight-byte table for keys F1 to F4 and then SHIFT-F1 to SHIFT-F4. Each byte is assigned a value corresponding to an internal (not ASCII) code. The keys themselves are values 138-141 (S8A-S8D), but you must not assign a key its own value since it generates an endless loop. Initially points to 64529 (SFC11).

The function keys perform the following activities:

| Key Combination | Function                     |
|-----------------|------------------------------|
| F1              | Cursor up (ATASCII 28: \$1C) |
| F2              | Cursor down (29: \$1D)       |
| F3              | Cursor left (30: \$1E)       |
| F4              | Cursor right (31: \$1F)      |

#### With SHIFT

|    |                                                 |
|----|-------------------------------------------------|
| F1 | Home (cursor to upper left, 28: \$1C)           |
| F2 | Cursor to lower-left corner (29: \$1D)          |
| F3 | Cursor to start of physical line (30: \$1E)     |
| F4 | Cursor to right end of physical line (31: \$1F) |

#### With CTRL

|    |                                                   |
|----|---------------------------------------------------|
| F1 | Keyboard enable/disable toggle (not console keys) |
| F2 | Screen display enable/disable                     |
| F3 | Key click sound enable/disable                    |
| F4 | Domestic/international character set toggle       |

Function keys are ignored with both a SHIFT and CTRL combination. You cannot redefine CTRL-function key definitions.

### NEWSLETTER DEADLINE

Get your contributions to the editors by August 21.

### BARGAIN OF THE MONTH

No real bargain this month. You ST owners should take a close look at those \$25 Logitech mice (mouses) which were shown at the last meeting. They looked real nice and you'll need one when your Atari rodent commits hari kari (not an unusual event). 8 bit owners should pick up the last couple of disks of the month. Those are great programs and two years ago would have cost at least \$75 each. Just because there is less commercial software available doesn't mean that you can't get good stuff for free.

Oh yes, renew your membership in ABACUS. We're not keeping deadbeats on the mailing list anymore. Pay up or you won't be able to read my pithy articles anymore.





reprinted from March 87 LACE, Lawrence Atari Computer Club,  
Lawrence KS

## Make a Power Supply

by: Mark E. Duncan

For a long time my 800XL had been acting increasingly strange. Occasionally it would lock up for no apparent reason. Other times screen colors would rapidly flicker, changing both in color and intensity, such like a poor monitor connection. A new monitor cable made no improvement. Progressively the lock-ups became more frequent. I began to experience a new problem. The computer would either snap completely off, such like a power interruption, or it would refuse to boot up from a cold start. When this happened, the only way I could get it going again was to disconnect all serial devices, start the computer so I got the READY prompt, reconnect the serial plug, type POKE 580,1 and press SYSTEM RESET. This forced a cold start with the computer already on. Several trips to the shop yielded perfect performance for the technician. It ran flawlessly, and a diagnostic cartridge showed the computer OK.

Finally, out of desperation, the technician suggested I borrow a power supply and use it awhile to see if it made any difference. (I had not taken my power supply in, only the computer.) Not always getting through the power-up sequence was a clue. Sure enough, with a new power supply borrowed from a 130XE, things worked perfectly. Put mine back on, and back to the erratic performance, sometimes OK, sometimes not. Great! Now just to pick up a new power supply. Not so great! No one in the area stocked power supplies, and to order one from a mail order supplier would be at least \$30 with shipping. Repair was impossible as my power supply was the infamous epoxy filled "black brick". Even if it would have been the repairable type, I had no way to determine if the problem was marginally low output voltage, voltage "spikes", or insufficient amperage.

In a Radio Shack sale catalog I noticed two possible solutions. The first was a ready to go power supply for \$4.95. It was from the old Adam computer, I would only have to change the connector to the 7-pin DIN connection used by Atari. The rated output, was .9 amp. The Atari supplies are rated at 1.5 amp. Even though Atari power supplies do not ever put out 1.5 amp, I figured that the Adam wouldn't put out its rated current either. It may have been enough, and it may not. I decided to pass on this gamble. The other alternative was to build one from various parts, using a switching power supply chassis in the same catalog. These came from Texas Instruments computers. (TI 44)

The resulting power supply works flawlessly, ended up costing about \$20, and can be repaired if necessary. Here's what you need:

- 1 Switching Power Supply  
Catalog No. 277-1016 \$4.95
- 1 18v 2 amp Isolation Transformer  
Catalog No. 273-1515B \$6.99
- 1 Inline fuse holder  
Catalog No. 270-1281 \$ .89
- 1 5 amp fuse  
Catalog No. 270-1278 \$ .69
- 1 package assorted grommets  
Catalog No. 64-253 A \$ .99
- 1 Ventilated Metal Utility Box  
(5 1/4" x 3" x 5 7/8")  
Catalog No. 270-253A \$4.95
- 1 2 #8-32 3/8" machine screws & nuts
- 1 4 #6 3/8" sheet metal screws





## Assembling the Power Supply

Begin by placing the circuit board in the housing and marking the four holes already drilled in the board to mount it. Do not center the board, instead, put it all the way to one end of the box. Be sure that the tallest portion of the circuit board is next to the side of the enclosure. The size of the box requires that the power transformer overlap the part of the circuit board in order for everything to fit. (See Fig. 1.) Drill the holes slightly smaller than the diameter of the #6 screws. (approx. 3/32") On the opposite end of the box, measure and drill two holes (3/16") on the vertical side of the base. These are to mount the power transformer. Drill two additional holes (either end), one 1/4" and one 3/8". These are for the 120v supply cord and the output cord to the computer.

The box has four rubber feet that are attached with sheet metal screws that project into the box from below. Cut or file these flat in the inside so they will not stick up and touch the bottom of the circuit board! Next, mount the circuit board, using four small rubber grommets as spacers under the circuit board. If it appears that any mounting screw heads will touch any trace lines on the circuit board, cut a small grommet in half and place it under the screw head on top of the board. This will insure that there are no accidentally grounded circuits. Check and make sure that nothing touches the underside of the circuit board. Mount the transformer on the other side of the box. Put appropriately sized grommets where the power cords will pass through, and tie a half hitch knot on the inside so any strain or pull on the cords will not pull them out.

Now you are ready to wire. See figure #2 for a diagram. The transformer is marked 120vac on one side with two black wires coming out. Solder or use a wire nut to attach one of the incoming power lines to one of the black lines. The other is connected to one end of the inline fuse holder, and the other end of the fuse holder is connected to the other 120vac transformer line. The other side of the transformer has three wires coming out. Two yellow, and one black. Insulate the end of the black lead, as it will not be used. Connect the two yellow wires to the red and white leads from the chassis. (Cut off the connector that came attached to it.) That completes the power-in side.

Use your old power supply-to-computer cord from your dead power supply. Pass it through the grommet and knot it as before. With a volt/ohm meter determine which lead goes to pin numbers 1,4,6. There is a pin diagram on the Atari power supply. From the diagram on the chassis package, determine which pins are +5v, and the GND. Solder the connection from pins 1,4,6, to the +5v source, and the lead from pins 3,5,7 to the GND source on the power supply chassis. That's all there is, check your connections, plug in your new supply, and double check for +5v dc at pins 1,4,6, and 0 v (GND) at pins 3,5,7. Now connect to your computer and you're back in business. -- There is one additional bonus with after all this work.... You can use your old useless power supply as an "Official Atari Doorstop".

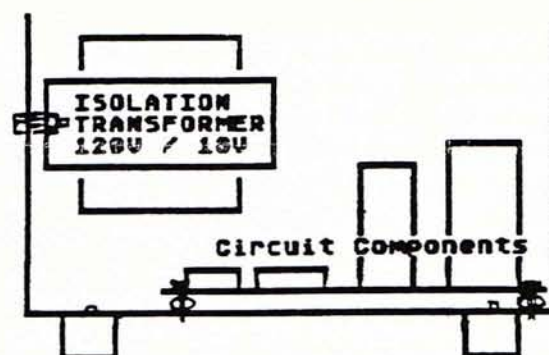


Fig. 1.

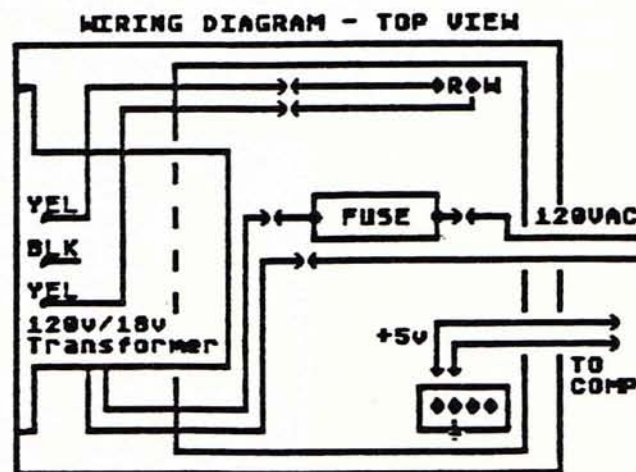


Fig. 2.





## Kyan Pascal - A Review

By: J. O. Stevenson, Dick Brown, and Mark Sandler

Reprinted from CURRENT NOTES: The Newsletter of by the Washington Area Atari Computer Enthusiasts

This review is a little unusual in that it reflects the views of three people instead of one. Jim Stevenson is involved in software development at the commercial level (using among others the languages Fortran, Pascal, and C), Dick Brown is a recently retired Fairfax County high school teacher who taught Pascal, and Mark Sandler is now a college student using Pascal. It is hoped that this spectrum of views will be helpful. It should be noted that Dick and Mark received Kyan Pascal more favorably than did Jim (aka curmudgeon), and the comments below should suggest why. Now, imagine are three reviewers are sitting around a table discussing Kyan Pascal while you are listening in....

### Jim:

What can the reader of a brief review of an implementation of such a rich language as Pascal hope to accomplish? To learn something about a product one might be "growing into" in the future? To decide if Kyan Pascal is worth buying now? What do you have to know in order to decide, if you are a novice, if you are experienced? In order to try to cover all bases, a brief discussion of Pascal, the language, will be given first followed by the view of Kyan Pascal. By the way, an excellent review of Kyan Pascal to supplement this one can be found in the November 1985 issue of ANTIC by Ray Cole.

### Pascal, the Language

Pascal was created by Niklaus Wirth of Zurich in 1970-71. His primary purpose was pedagogical: to teach others how a language should be. He wished to avoid the pitfalls of languages such as Fortran (and therefore Basic). Code should be self-documenting and easy to read so that others could know how to change it. For additional clarity and simplicity, it should employ structured patterns in both control and data. Only three control structures are needed: process, such as assignment statements; branch, such as IF...THEN...ELSE; and loop, such as REPEAT...UNTIL or WHILE...DO.

Data structures involved augmenting the simple arrays of integers or reals with RECORDs of mixed types. For example, a mailing address could become a single record containing fields of characters for a name, street and city, and integers for street number and ZIP code, and a variable could represent a "mailing address" record just as it could represent an integer, real, or array.

In order to keep the code at a high level and general, to avoid machine specific tricks, Wirth would not allow code to access user-specified absolute addresses in a machine. In addition, to simplify the language for pedagogic purposes, all the routines had to be combined together in a single source file before compiling; there would be no "separate compilation," which he had observed to

be at the heart of many bugs in contemporary code. This original formulation of Pascal by Wirth, as codified by the International Standards Organization (ISO), has become known as Standard Pascal.

The success of Pascal in the academic world and the ease with which it could be implemented in the newly evolving microcomputers stimulated its use in the commercial world. But real applications make messy demands. A programmer must access specific addresses sometimes, and large projects require separately compiled routines in large libraries generated by teams of programmers. Thus arose the "extensions" to Pascal to solve these problems, the most well-known being the UCSD version.

And finally Niklaus Wirth has responded himself with Modula-2, which is already available on the Atari ST. It is very comparable to the committee generated Department of Defense language Ada. Thus Standard Pascal is at the heart of many modern languages both in industry and academia.

### Dick:

Pascal has been recognized by the Fairfax County School System as an ideal first language for students of computer science. The school system is aware that students who learn Pascal as a first language develop good programming habits and skills essential for structured programming.

### Pascal for Atari

The variations of Pascal available for the Atari user are the ATARI PASCAL LANGUAGE SYSTEM from APX, Draper Pascal from Draper Software, and Kyan Pascal from Kyan Software.

The APX version will execute on the 800, 800XL, and 130XE. The program is an excellent version of Pascal having many features not found in Standard Pascal, however it has the disadvantages of requiring two disk drives, being extremely slow in compiling, and having no built-in editing capability.

The Draper version will execute on the 400, 800, 600XL, 800XL, and the 130XE, requiring only a single disk drive, but for anything other than a simple introduction to the Pascal language, it is virtually worthless.

### Kyan Pascal

### Mark:

The Kyan Pascal package (version 1.2) comes with one system disk (not copy protected for backup purposes only) and a hundred page manual. The disk comes with an editor (ED), a compiler (PC), DOS 2.5 (plus the Ramdisk), and many subroutines for graphics.

### Dick:

This version of Pascal is completely compatible with Standard Pascal thus allowing programs and program modules written within the guidelines of Standard Pascal to be





transported to many other machines without modification. Kyan Pascal provides a number of extensions to Standard Pascal, including string handling procedures, random file access, crude PEEK and POKE capability, the inclusion of a user defined library of procedures and functions, the allowance of assembly language routines, the chaining of object code files, and the capacity to handle high resolution graphics.

#### Jim:

Version 1.3 is now out and version 2.0 is due out in mid February. Version 2.0 will include a new manual as well. (Upgrade policy will be discussed below under Support.) Except for the manual, these versions do not remedy problems I found with version 1.2 (to be addressed below under Atari Graphics).

#### Editor

##### Dick:

Kyan Pascal consists of an editor program and a compiler/assembler program. The editor program is similar in use to the Turbo-Pascal editor. The Kyan Pascal editor is an easily learned full screen, insert mode editor which greatly facilitates program editing. Cursor movement is accomplished via the standard Atari arrow keys as well as 10 Control/Key commands that allow rapid movement to specified locations within the text of the program such as top of the file, bottom of the file, forward one word, back one word, and back 20 lines. The editor also supports such functions as search and search/replace, edit at line, include a file, and block text movement (contrary to what was said in the Cole review of version 1.1).

##### Jim:

The curmudgeon view is that it is irritating to have to learn yet another editor, and one from Apple land to boot! Of course, Atariwriter+ has changed things a bit too from Atariwriter, so one shouldn't complain. One thing Atariwriter+ has which would be very useful for Pascal is 80 column editing via a scrolling screen. With all the indentation and text involved in Pascal, 80 columns are almost a requirement. My biggest complaint, however, is with upper and lower case settings. Most (but not all!) of the editing commands accessed from the command menu require upper case letters. You can be editing your program in lower case, press escape to get to the editor, type "c" to set search/replace options, "a" and "b" for the strings, and then "s" in response to "CHANGE ALL STRINGS OR SOME (A/S/Q)?", never realizing that you are still in lower case. But only the last "s" gets no response; the system acts as if it were hung up. There were other unnecessary examples like this. Since it is so easy to set the upper and lower case flags in software for the Atari, this kind of sloppy user-unfriendliness is not acceptable.

#### Compiler

##### Dick:

The Kyan compiler/assembler operates at a fairly fast speed and allows the user the options of compiling without generating an object file, to send error messages and assembly listings to an appropriate device. There are 35 compiler error messages built into the compiler which are printed when a compilation error is encountered. The line containing the error is displayed with its line number and an "indicator" pointing to the error. A description of the error follows. Compilation continues, but to this user, it is difficult to locate and interpret further compilation errors due to a single error quite often generating multiple error messages following it. Kyan Pascal also contains assembler and run-time error messages.

##### Mark:

The compiler is the best feature of Kyan Pascal. It is a one pass compiler that does not need linking in order to have a runnable program. This saves time in debugging a long program. All in all, the compiler is extremely fast and easy to use.

##### Jim:

Curmudgeon again: the compiler with its constant disk accesses is agonizingly slow by Action! standards. An important point in Kyan's favor is that it will assemble imbedded 6502 assembly source. In fact, it should be emphasized that Kyan Pascal produces high-speed assembly code and not the slower p-code that requires an interpreter (such as with Apple and UCSD Pascal).

##### Dick:

Execution of the object file does not require using the Kyan Pascal disk, but does require the disk containing the object file to contain the Kyan Pascal library file, "LIB". This file utilizes 78 sectors of disk space.

#### Ramdisk

##### Jim:

The ability to put the compiler and editor on a Ramdisk is so important that it is almost worth buying a 130XE if you want to use Pascal. It is ridiculous to contemplate any extensive Pascal software development otherwise. However, my joy turned to anger when I discovered that Kyan Pascal is married to DOS 2.5. Since the disk file loader routines have been relocated, the best DOS for Atari, namely SPARTADOS, cannot be used. ICD has gone to a lot of trouble to become compatible with programs using Atari DOS 2.0 (it works splendidly with Atariwriter). SPARTADOS would allow you to boot the disk, set up the Ramdisk, and load it with the files you want automatically. It would also give true double-density on the 1050, which would be very important for extensive software development. I should say that I





have subsequently overcome the irritation of manually copying files to the Ramdisk by using a FastFingers file appended to AUTORUN.SYS (see ANTIC, Feb 1984).

Mark:

Atari Graphics. Kyan Pascal supports all of Atari's graphics functions and colors that are offered in BASIC. Each command is implemented by including the required subroutine into the program from the system disk.

Jim:

Of the three graphics functions I used, graphics(), setcolor(), and plot(), I found bugs in the first two. The bug in the graphics function is so bad that I don't understand how anyone could use it. If you use the graphics function twice, the second occurrence will yield a device open error, since the assembly code fails to close the S: device before opening it. The function also appeared to allocate screen memory in the stack area. When I talked to Dick Brown about this, he admitted he had only used the text mode, and so had not used the graphics function. The setcolor function multiplies the color and hue by two (modulo 16)! When I talked on the phone to the president of Kyan Software, Thomas E. Eckmann, he was not aware of these bugs. Thus Version 2.0 can be assumed to still have them.

The lack of a byte data type makes it very difficult to access the registers and addresses necessary for true Atari graphics programming.

Documentation

Mark:

The manual provided with the Kyan Pascal package is extremely well written, covering everything from editing and compiling to creating graphic displays. The manual gives examples of everything a programmer will experience before getting a program to run by itself.

The manual is rather frustrating. It is neither a tutorial nor a reference; it falls in between and therefore does neither particularly well. Being primarily an Apple manual with Atari as an afterthought did not help much either. In fact, to be most uncharitable, the ghastly formats of the program examples and the ambiguous and erroneous use of terminology lead me to suspect a novice at programming put the manual together. Since the advantage of Pascal (compared with Action!, say) is its universality, there are excellent books on the market explaining the language (tutorials and references). What is needed most is a detailed discussion of Kyan's "extensions." Does "chaining source code" really mean overlaying executable image code at run time? (Yes.) How can an integer pointer be used to PEEK a byte location? (The MSB is set to 0.)

Support

Kyan Software offers fairly adequate support for its Pascal. For \$9 you can receive an annual subscription

to the bimonthly UPDATE...KYAN! This is a must!!!! The first two issues corrected the manual regarding the use of assembly language and chaining. Assembly listings were given for true PEEK and POKE and for the previously omitted sound function. I would like to see bug fixes included as with the Action! newsletters.

Anyone purchasing Kyan Pascal (v 1.3) after 1/1/86 can get the new version 2.0 free of charge when it appears. That is important, since I don't consider Kyan Pascal or its manual particularly usable by the novice at this point. Those of us who got Kyan Pascal before Dec 85 have to put out \$20 for Version 2.0!

Evaluations

Dick:

This reviewer (like Jim Stevenson) holds the viewpoint that the home computer is primarily a learning device and that Kyan Pascal greatly enhances your Atari computer in serving this function. Kyan Pascal has been recently advertised for as low as \$44 a copy. At this price the reviewer recommends -- Buy it!

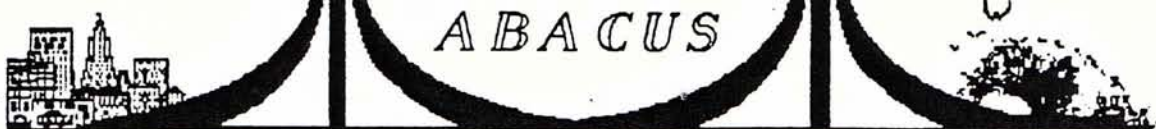
Mark:

Kyan Pascal is an excellent standard Pascal plus a whole lot more. The editor, compiler and other features really make up one great Pascal package. The suggested list price, \$69.95, is well worth it for the serious or amateur Pascal programmer.

Jim:

My views conform more to those expressed by Ray Cole in his review. Kyan Pascal fulfills Wirth's pedagogical goals for Standard Pascal but its lack of extensions makes it perhaps unsuitable for tapping Atari's graphics power. My vote for the best programming language for Atari is still Action!. The excellence of the editor and the speed with which you can move between compiler and editor is unexcelled. The simplicity of accessing specific addresses and the lack of hassle over semicolons are a joy. However, since there are no tutorials in Action! and no explanatory texts on the market other than the (excellent reference) documentation that came with the software, Action! is not for the newcomer to structured programming. Thus Pascal wins again for the novice. Even for the experienced programmer, Kyan Standard Pascal has a strong place, namely in applications that rely heavily on operations with real numbers, such as simulations and other scientific programming.





## REVIEWING THE ANTIC CATALOG

by Charles Cherry

The Antic Catalog is a source for some great software at reasonable prices. The problem is that not much is known about the products. This is because it does not get reviewed. Antic Magazine does not review it to avoid the appearance of a conflict of interest. The other magazines do not review it because they put competition with Antic ahead of informing their readers. It's a shame, really.

Before I begin, I need to put my biases out where they can be examined. I was Product Manager for The Catalog for a while last year. I still write for the magazine and do occasional projects for The Catalog. I have friends at Antic and I know no one at any other software publishing house. Nevertheless, I intend to judge the software fairly. If you disagree with any of my assessments, give me a call. We'll put your rebuttal in the next issue.

I will just cover the 8-bit products this month. I know them better and they seem to be in short supply. Some are listed as "Sold Out" and others are "Limited Stock". I guess that means they won't be available long. Antic has a 20% sale now. Buy two products and save 20% on your next order. Obviously, you should purchase the two cheapest disks, get the coupon, and then buy out the store. You can buy the software over the counter at Antic (544 Second St. San Francisco). That saves time and the postage and handling. The software is also available at some dealers, often at lower prices.

I will rate the products as follows:

- \*\*\*\* Buy it. If you have an Atari, you need it.
- \*\*\* This is the best of its kind.
- \*\* A good value for the money.
- \* Forget it.
- (no stars) I don't know the product.

So, open up your Catalog and let's wander through it. We'll ignore the hype. I wrote a lot of it. We'll also ignore the third party products. You can see reviews for them elsewhere.

### \*\*\* RAMBRANDT

The most powerful drawing package for the Atari. Not as easy as some, but it does everything (except Graphics 8). There is a patch which lets you use the button on the Atari Touch tablet and the Zenobian Rat. It is on the RAMBRANDT COLLECTION, a public domain slide show, which is also recommended.

### \*\*\* SOLID OBJECT MODULE

Not CAD-3D, but a usable enhancement to RAMBRANDT.

### \*\* EARTH VIEWS

Interesting geography tool and game. Some people love it. Does not produce maps for you to use.

### \* SPACE BASE

PLANETARIUM from Atari is much better. I think PLANETARIUM requires an XL/XE with 64K, I know it needs a 1050. If you have an 800 or an 810, you might consider this.

### \*\*\* ORBIT, A TRIP TO THE MOON

A wonderful game/simulation, very realistic. Joystick controls are a little difficult to master. An ideal gift for the kids.

### \*\* XTAL - ADVENTURE IN SPACE

A good update to Star Raiders. I'm not much on games.

### \*\*\* BLUE TEAM BRIDGE

Simply the best bridge game on the Atari. If you play bridge, or want to, this is for you.

### \*\*\* COLOSSUS CHESS 3.0

No longer the most powerful chess game on the Atari, but I think it is the most playable. If you just want a chess game, any of them will do. If you are serious about chess, get Colossus.

### \*\*\* THE RHYTHM COMPOSER

A drum machine. Useful to musicians, a lot of fun to everyone. I will demonstrate it at the August meeting.

### \*\*\*\* COLORSPACE

Wierd and wonderful. The best demonstration of what Atari graphics can do. This should be required for all Atari owners.

### \* WORD and GRAPHIC MAGIC

Sold out and it's just as well. This is a decent word processor, but TEXTPRO is better and it's free. A historical note: Word Magic was the first wordprocessor which let you include pictures in your text. It was the first on the Atari, possibly the first on any computer. Thanks Jim Thompson.

### \*\*\* SPELL MAGIC

The best spelling checker because it looks up all the words while you go out and watch Wheel of Fortune. When you get back you can whip through the corrections.

### \*\*\*\* CREATIVE PROCESS

The only outline processor for the Atari. Anyone who writes should have this. Ideal for research papers in school. It also doubles as a free-form database. Not perfect, but it's the only game in town.



**\*\* CALC MAGIC**

Powerful, easy to use. A worthwhile alternative to SYNCALC. The programability makes it a joy for things like home accounting.

**THE ENHANCEMENT DISKS**

I don't know this product. I do know that it brings together all the public domain enhancements and adds a lot more. B/Graph is the best graphing/statistics package for the Atari. If you use it, I guess you need this.

**\* BBCS II**

This just never got fixed right. It is powerful, but frustratingly unreliable.

**\*\* BACKTALK 1.2**

It does more than EXPRESS, but not enough more. If EXPRESS doesn't fill your needs, give BACKTALK a try. My copy of 1.2 was a little flakey and I went back to 1.1 until I switched to EXPRESS.

**\*\*\* CHAMELEON**

If you plan to keep your Atari for a long time, you should probably get this while it is still available. Someday you may need to talk to a mainframe.

Skip over the ST section with its full color pictures. I suppose you can't blame Antic. FLASH probably made more money than the whole 8-bit catalog combined.

**\*\* and a half PICTURE +/LISTER +**

There is not much to choose between PICTURE + and MAGNAPRINT. PICTURE + manipulates pictures better and is easier to use (although neither is effortless). MAGNAPRINT prints slightly better. I prefer PICTURE +, but I won't hold it against you if you like MAGNAPRINT.

**\*\*\*\* ENVISION**

OK, it's a font editor. We never said that out loud at Antic. But it really is more than that. Buy it, even if you already have 12 font editors. Buy it, even if you don't know what a font editor is. Some day you'll thank me.

**\*\* GRAPHIC SHOP**

If you use PRINT SHOP, you need GRAPHIC SHOP or something like it. The price seems a little high and I've heard of other products that do the same thing, but I've never seen them. Also get the Public Domain Icon Graphics Editor on page 15, and give a copy of it to the ABACUS disk library.

**MAPWARE**

Too bad you missed this one. It did produce nice maps, slowly. It was a real educational tool. You may find it in a store. Too bad they let it expire.

**\* SCREEN PLOT**

You can skip this one unless the 1020 is your *only* printer. It prints pictures as pixels, sounds like a woodpecker. Results are mediocre.

**\*\*\* PRINTER DRIVER CONST. SET**

If anyone is still using the ATARIWRITER cartridge, you need this for most printers. It is the best of its kind, but you'd be better off getting TEXTPRO.

**\*\* DATA MANAGER XL**

Data bases are a weak point on the Atari. There just aren't any real good ones. This one's as good as any of them. The joystick option makes browsing files easy and fun.

**\* THE FAMILY TREE**

Not the best genealogy program, although it is certainly the cleverest.

**\*\*\* ASTROLOGY**

Don't laugh. I have a friend who ran charts on this, added boiler-plate text to explain the chart, and sold them for \$10 each.

**\*\* SHERLOCK 1050**

The Atari world needs a real good sector editor. This isn't it, but it's passable. I use DISKEY, hard to find and harder to use, but more complete than SHERLOCK. Still SHERLOCK is better than nothing.

**INTERLISP/65**

I don't know this package, but I would seriously doubt that LISP can be useably implemented on an 8-bit machine. If you have tried it, let us know.

**BASIC VIEW**

I don't know this product. No comment.

**\*\*\* FLOATING POINT****EXTENDED D.D.T.**

If you use MAC/65 or if you ever intend to do assembly language programming, get this now. It's a steal.

**\* DEEP BLUE C and MATHLIB**

C doesn't fit well on an 8-bit. But, if you want to learn C, this will help. Good luck.

**\*\*\* THE DRAGON'S TAIL**

I'm responsible for putting this into The Catalog. It is eccentric and poorly organized. BUT, it is unique and undeniably powerful. If you program in BASIC, you will find much to like here, and some to hate.

**\* CHOP SUEY**

I really dislike this program. But that didn't stop it from being Antic's best selling program.





## **\*\* SEVENS KLONDIKE SOLITAIRE**

The best solitaire I've seen, but it won't let you cheat. No comment on SEVENS except that it has great graphics.

## **\*\*\*\* SEVEN CARD STUD CRIBBAGE**

Every one should have some card games on their computer. These are my nominations. STUD is especially good. Your computer opponents have individual personalities and you can bluff some of them, or they might bluff you. You can also design your own opponents. Get it and have fun.

I'm only going to mention four Public Domain disks. The others are widely available elsewhere for less money or of limited appeal. If you buy these programs, make a copy for the ABACUS Public Domain library.

## **\*\*\* AMIS XM10.BBS**

A first rate bulletin board for the Atari 300 baud modems.

## **\*\*\* 130XE HI-RES DESIGNER**

It ain't that great, but it's the only mode 8 graphics package in captivity. Only works on 130XE, I don't know why. Written in compiled BASIC. Includes source code.

## **\*\*\* TRIVIA QUIZ**

Truly an excellent implementation. Four people can play on an 800, 2 on an XL/XE.

## **\*\*\* PERSONAL FINANCE AND EDUCATION**

The home accounting package on this disk is better than the commercial ones.

That's the lot. There's some real good stuff here at decent prices. Four of them must-haves, COLORSPACE, CREATIVE PROCESS, ENVISION, and SEVEN CARD STUD/CRIBBAGE. Others are also useful. Only a couple of clunkers. Check it out while they're still available.

## **MAGAZINE LIBRARY REPORT**

by Ed Ness, Magazine Librarian

I would like to thank CARL VON HERRMANN for the CREATIVE COMPUTING, COMPUTE, BYTE, INTERFACE AGE, & MICROCOMPUTING magazines that will help fill some of the gaps in the magazine library. I know that some of you members must have some surplus magazines that you don't need that could make this library even better.

The following is an update of what is needed for the magazine library.

ANTIC VOL.1 #2; VOL.2 #1,2,4; VOL.3 #10,11,12; VOL 4 ALL; VOL.5 #2,3,5,7,to 12; VOL.6 to current issue.

ANALOG #1 to 4; #6 to 9; #27 to 41; #43 to current issue.

COMPUTE VOL.1,2 all;VOL.6 #10; VOL.7 all; VOL.8 to current issue.

CREATIVE COMPUTING VOL. 1,2,3,4; VOL.5 #1,3; VOL.6 #1 to 8,10,12; Vol.7 #3.

BYTE VOL.1,2; VOL.8 #12; VOL.9 #3,9,11,12; VOL.10 #1 to 5; VOL.11 #5,7 to current issue.

START most issues.

ST APPLICATIONS all issues.

I maintain the listings of articles in the various magazines with SYNFILE+. To update the listings I have to redo the various files over and over again. Can anybody help me make additions to these files without doing the whole file over again?

The following is an list of programs and articles in BASIC that I have found in magazines that we have on file:

ACCURATE TIMING IN BASIC, ADDING BASIC FUNCTION KEYS, ADDING COMMANDS TO BASIC, ALL SORTS OF BASIC SORTS, ATARI AUTORUN IN BASIC, ATARI BASIC TUTORIAL, ATARI BASIC, STRING SORT, ATARI EASY SCROLL, ATARI LINE RANGE MANIPULATOR, ATARI MASS LINE DELETE, ATARI SAFE RAM, ATARI TAB, ATARI TIMES, AUTOMATIC PROOFREADER, BASIC ATARI, BASIC SORTS, BASIC COMPILERS, BASIC PROGRAM TECHNIQUES, BEYOND BASIC, C:CHECK, EDITING PROGRAMS, FOR NEXT LOOP, MOVE MISSELS IN BASIC, MOVING PLAYERS IN BASIC, PLOTTING IN ATARI BASIC, STRING ARRAYS, STRING SEARCH, STRINGS IN BASIC, THE ASCII CODE, WRITING TRANSPORTABLE BASIC.

The following is an list of LOGO programs and articles:

ATARI LOGO, DEMONS OF ATARI LOGO, FRIENDS OF THE TURTLE, LOGO MODERNE, SAFE SPACE AND LARGE LETTERS, SOLVING PROBLEMS WITH LOGO, SOLVING PUZZLES WITH LOGO, TURNING LOGO UPSIDE DOWN.

In the following newsletters I will list some of the other articles that I have found in the magazines.



# ICD Multi IO

by Phil Cartier

I read about the Multi I/O on Compuserve last summer. It sounded like an ideal expansion accessory for the XL and XE computers. I had just completed 256K expansions for my 800 and my 800XL. Although difficult and frustrating, both conversions worked and introduced me to the power and speed of the ramdisk. The ramdisk really made things faster and easier. However, it also showed the problems with a computer ramdisk. Errant programs were forever locking things up and causing me to reboot. Multi-IO solved the problems. It has its own power supply and maintains its memory even when the computer is off. Programs that crash an XL or 800+ don't affect the Multi I/O at all. It takes more than an errant poke to upset it.

The Multi I/O also takes the place of several other attachments. It includes a Centronics compatible printer port, an RS-232 port for modems or printers, a video port for a forthcoming 80 column card, and THE high tech enhancement- a SCSI hard disk interface. In addition, it holds either 256K or 1meg of memory for a ramdisk/printer buffer. All in all, a very cost-effective little box, even at the list price of \$199.95 for the 256K model. Just add it up- \$40-50 for a ram expansion, \$60-80 for a printer buffer, \$50-100 for a 850 interface, or ICD's PRi connection, and at least \$80-100 for an hard disk interface, if you can ever find one.

The Multi I/O is a light grey box virtually the same size as an 850 interface- about 1 X 7 X 9 in. It comes with a 9 volt AC power supply and on top is a silkscreen of the ICD and Multi I/O logo. A six inch ribbon cable and connector come out the front and plugs directly into the back buss on the 800XL. The 130 XE requires an adaptor that plugs into the cartridge slot and extender. The adaptor has two cartridge slots in it, one for a regular cartridge, and one for their R-time battery backed clock. Hook up is simply a matter of plugging in the computer connector and the power supply. Even I could do it.

Near the left hand edge on top are two LEDs. One green (power on) and one red for when the MIO is active. Along the left hand end are the power jack, the on/off switch, the RS-232 port, and the video port. The video port is there, but the card to run it hasn't been released yet. On the right hand end are a standard Atari DB-15 printer port, and the fifty pin SCSI socket.

The unit works as advertised. I've had it on continuously for about a week with no problems. The RS-232 port works a modem just like the 850 did. I just unplugged it from the one and stuck it onto the MIO. The printer port works just like the ICD PRiConnection. I had been using a printer hooked to the Atari serial port, so I didn't have a long enough cable for the MIO. I did have a short cable that plugged in and confirmed that the printer printed like it was supposed to.

reprinted from March 87 SPACE PROBES, Southcentral PA. Atari  
Computer Enthusiasts, Harrisburgh, PA

ICD's MIO apparently has a few minor inconsistencies with the 850, but nothing has bothered me, nor have I heard any complaints about it. Lacking a hard drive I have not tried the SCSI interface. I have talked to several BBS's that are running hard disks off the MIO with no problems, so any problems should be traceable to a hardware defect and repairable.

ICD included a copy of Spartados to run the MIO. Necessary since few people could do anything with MIO otherwise. It isn't a complete DOS, but it does recognize the ramdisk and hard disk, and can access files on any Atari format disk. Spartados uses a lot of extrinsic commands loading them in from the disk when needed thereby freeing up memory for other uses. Common commands like Rename, Copy, Erase, DIRectory, and others are in memory all the time. It works like MS-DOS making it familiar to IBM users. The best feature is that all of Spartados can be copied to the MIO ramdisk to speed up operation.

The MIO can be accessed directly at any time by pressing the select and reset button (holding both down while the reset occurs). This brings up the MIO menu. Be careful not to accidentally do this as it erases what ever is in the computer's memory. The configuration menu lets the operator control all the MIO functions. Up to 8 drives are recognized and they can be switched around at will. This lets the computer boot from the ramdisk. It takes all of an eyeblink. I made up a boot disk with Spartados that contains all my frequently used programs. After initializing the ramdisk with Spartados I copy all the programs to it. Two keystrokes switch the ramdisk with drive 1. Then, when the computer is turned on it boots from the MIO in less than a second. Spartados also has a RD.COM file that can be used to set up the computer memory ramdisk if desired for use in programming.

The setup menu also controls the printer spooler. This handy device holds text to be printed until the printer gets to it. No more waiting around for a long letter or article like this to print out. The buffer has a number of features: a Pause between documents, Repeat for multiple copies, and line feeds if your printer needs them. Both the serial or parallel ports are supported. P1 is the MIO, P2 is the Atari serial port. None eliminates the buffer entirely. The Atari serial port doesn't have a buffer though. I guess that was too tricky even for ICD to do.

The RS-232 port is also easy to configure. You can easily set baud rate up to 19,200, parity, stop bits, and either R or P depending on whether you want another printer, or a modem.

Finally, you can set up for your hard disks. Each drive in the configuration menu can be up to 16 meg. Either as a physically separate drive, or as a partition on a larger drive. Just hook up your 60 megabyte Priam 1060 and go. Kind of ridiculous, since 10 meg will probably hold every 8 bit program ever published.

ABACUS





# INPUTS FOR YOUR ATARI

reprinted from QUACE Newsletter, Queensland Atari Computer Enthusiasts, Queensland, Australia

The most common type of input your ATARI gets, are the signals it receives back from the joysticks and paddle controllers. But with the use of some inexpensive sensors, you can increase the usefulness of your computer, or just have fun experimenting with your own surroundings and your ATARI computer.

The types of sensors range from micro switches, through microphones, to light and temperature sensors. Any one of these can be connected and sensed by your ATARI at the same time. This allows you to use your Computer to control an intelligent alarm system, or any number of different applications, only limited by your imagination.

The easiest sensor circuit to construct, is simply a MEL12 phototransistor soldered onto a 9 pin joystick plug. The MEL12 costs about \$1.30 at DICK SMITH Stores and the 9 pin plug costs about \$3.75. Looking at the back of the MEL12 with the wires facing toward you, you will notice that these wires are in a triangular pattern. You can cut the top wire off short, as we only need 2 connections for this project. Now with the back of the 9 pin plug facing you and the wires of the MEL12 facing away from you, with the short wire at the top, you can solder the left side wire to the 2nd connection from the left on the bottom 4 pin row on the 9 pin plug (this is the +5volt connection), then solder the right side wire to the last connection on the bottom row on the 9 pin plug (this is the paddle(0) connection).

By writing a simple BASIC program like:

```
10 SOUND 0,PADDLE(0),10,10
20 GOTO 10
```

You can hear the sound varying, as you vary the amount of light falling on the

phototransistor. By putting the value of paddle(0) into A, you can get the value of the paddle port to match the range of the sound register e.g.:

```
10 A=PADDLE(0)*1.11
20 SOUND 0,A,10,10
30 GOTO 10
```

As you can see, it is very easy to write simple programs to take advantage of the different sensors you can plug into the joystick ports of your ATARI computer.

A practical use for your computer, would be to use it as an intelligent burglar alarm system and it is a very simple task to add the hardware and software to perform this task. The signals coming from the joysticks are really only the opening and closing of switches and, in the case of the paddles, the reading of varying amounts of resistance. You can connect your own switches and sensors to these ports, so they can be scanned by the computer and used to trigger different responses, according to the software program you write.

Each port can read 5 switches and 2 light or sound sensors at the same time. This will allow you to design an alarm system with 10 switched circuits and 4 sensor circuits for the XL/XE's or 20 switches and 8 sensors for the older 400-800 ATARI computers. Any type of switch can be used from magnetic to micro-switches.

The connections for these switches are, looking at the back of the 9 pin plug with the 5 pin row at the top, each switch circuit has to have 1 end connected to the 3rd from the left on the bottom row, the other ends can be separately connected to pins 1-2-3-4 from the left on the top row and 1st from the left on the bottom row.

(Continued)





## INPUTS FOR YOUR ATARI (CONTINUED)



The sensors have 1 end connected to the 2nd from the left on the bottom row and the other ends connected to either 1 of the right hand side last pins, these are paddle(0) and paddle(1) on joystick port 1 and paddle(2)/paddle(3) on port 2.

I use the inputs into the ATARI to sense movement and the audio output from the DIN plug at the back of my 800XL to speak out through a small robot which guards our company vehicles at night.

By using SAM, the robot actually talks to anyone who hangs around the vehicles for too long after midnight.

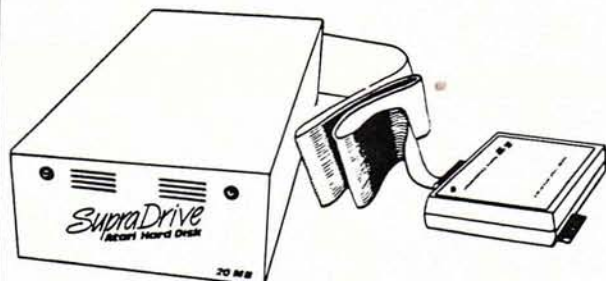
The Securobot can also be used to play music at barbecues, or when your just working outside your house. As I mentioned before, the uses of the ATARI computer are only limited by your own imagination.

See you at the next meeting.

W.Kilburn

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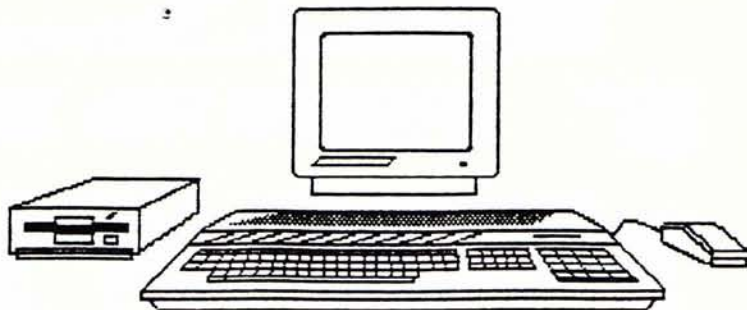
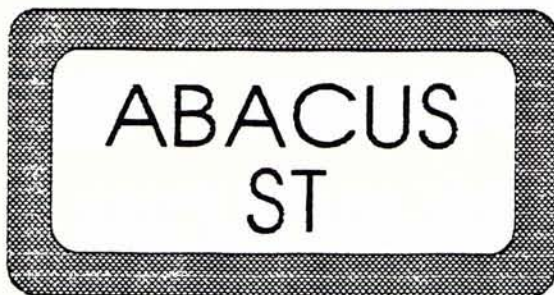
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## RANDOM THOUGHTS

by Rob Re

THEY GOT JUGGLERS, WE GOT JUGGLERS - If you have seen the most current dazzling demonstration on the Amiga, the one with the strange looking fellow juggling 3 reflecting balls, then you have also seen the latest ST demo. Not to be outdone, some Atari users have come up with a very respectable copy to run on the ST. Admittedly there are fewer colors, but in most other respects it about the equal of the Amiga demo. This is fun. Now I guess we have to wait for Xanth to come out with something better. I have an idea. How about some guy juggling three Amiga computers each running a different demo, and the whole thing in 3D with Antic's glasses?

WHOOOPS! - A dealer reported to me that a recent port of a game program from the Amiga to the ST at one point prompts the user to insert the "Amiga" disk. Oh well, that is one bug the programmers cannot blame on TOS or GEM.

ATARI RELEASES ONE MORE - Another drip has come out of the Atari software pipeline. Battlezone, the popular arcade game from 7 or 8 years ago, has finally hit the stores under the Atari label. I did not get a chance to get a look at it, but at less than \$20 in the store I saw it, at least Atari continues to put out low cost software.

THIS MONTH'S RUMOR ON THE BLITTER - The latest rumor on the long awaited blitter chip upgrade seems to indicate that the blitter upgrade for current ST owners will entail a board swap. If this is the case, a lot of users, myself included, who upgraded the memory will be upset, to say the least. I guess we will have to wait a few months and a few more rumors to find out the truth. After all, the Mega's will be getting most of the blitters, and it looks like they will not be out for another month or so.

ATARI IN THE CHIPS - According to a report in ST World, Atari has purchased an equity share in NSI, a chip and board making company back east. Rumors have been flying

that Atari wanted to buy a chip company so that it could better control its chip supplies and cost. I for one sure hope this is not the company that has been doing the Blitter chip.

MEGA DEALERS TO BE RESTRICTED - Apparently Atari is going to attempt to control the dealers that will be allowed to carry the new Mega machines. It seems that only about one third of the current dealers will get the Mega's, and they will not be allowed to discount the machines. No discounts on Atari machines is a contradiction of terms for most of us long time users. Buying at list price? Come on Atari, that is not american. What are we going to talk about at meetings if we can't talk about who paid the least for their equipment?

THOSE GOOD OLD REPORTERS - A recent blurb in the SF Chronicle reported that Atari, maker of "games", is going to purchase most of their RAM chips from American firms rather than from Japan as the result of the recent tariffs placed on Japan. "Game" maker? Maybe we should start calling the Chronicle a comic book. Then again, that would be pretty accurate in my case since the comic section is the only section I regularly read.

ATARI IN THE MUSIC BUSINESS - Next time you are in your favorite music store, do not be suprised to see an ST computer for sale. Atari has signed up 50 music stores already and plans to sign up another 200 in the next few months. When you combine this with the already extensive library of MIDI software, one has to believe that the ST is becoming the computer of choice for musicians.

THE ST, A MACHINE OF MANY FACES - First there was CPM, and then David Small comes along with a MAC emulator for the ST. Now there is a reasonable IBM emulator in PC Ditto. I hear there is a program that partially emulates an 8-bit Atari, and even rumors of an Apple emulator. You say you do not like GEM, no problem, What kind of computer you say you want me to slow this ST down to look like? Just a second while I boot this disk ...Let's hope some fanatic with a drawer full of 2600 cartridges does not come out with a VCS emulator.





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## Aegis Animator

I purchased the Aegis Animator some months ago, and now feel that I have used it enough to review it fairly. The first version of the Animator was released for the Amiga (a Commodore, as most should know by now). The program on the ST is version 2 and has several features not found on the original one. I do not know if they made version 2 for the Amiga also. This is all by the way, however. The bottom line is that the Animator was the first complete and usable animation package available on the ST.

The program implements three different methods of animation. It supports the obligatory color-cycling (such as used frequently in creating water-falls), it has 'metamorphic' animation, a rather new concept to personal computers, and of course cel animation. Thus, there may be a versatility bonus in this program. (Read on...)

I don't see any reason to dwell over color-cycling or cel animation very much. The previous example of color-cycling to produce a waterfall 'shimmering' and its existence in all of the major drawing programs (Degas, NeoChrome etc.) should make it familiar to most ST graphics aficionados. Cel animation is merely the flipping through several progressive images at a rate fast enough to create the illusion of movement (like the individual photographs that make up a movie).

Metamorphic animation is a different thing all together. The Animator has built in creation routines that generate polygons, circles, stars and other such things as basic objects. You can then bend, distort, rotate and otherwise mutilate these things to your hearts content. The Animator will, through a variety of ingenious little processes, make the 'inbetween' steps so that you can watch your little shapes 'metamorphose' into different ones. Finding an application for this is up to you, for I sure cant, but it's cute.

Is it easy to use? Is that a trick question? How about 'maybe'? The folks at Aegis broke their backs trying to make a good user interface. I think they either didnt go far enough or they went too far. The program is fully Gem'd, with all sorts of drop down menus and cute little icons. You have access to all of the programs capabilities through these tools, though they prevent any sort of accuracy or precision for most operations. What they did do is make the script files an editable text file giving you precision down to the pixel. Now the gem business relatively easy to use and expedient, but if you want any kind of precision you must go to a text editor which can be a royal pain but yields the best final results. I suppose it depends on what your

interests or needs are. I would just assume make it ALL text and concentrate on speeding up that method of constructing an animated sequence. That would be too complex for the market of people who aren't perfectionists. They did a sufficient job of supporting both groups.

What about the important part? How does it look? Well, with sufficient work, the results can be excellent. The program has excellent management of time so you can make almost every event fit perfectly and smoothly in with the rest. If one takes the time to time everything well (yep, usually with the text editor) you can make very nice, maybe professional, animations.

I could go on for pages listing all of my little likes and dislikes about the program, but I wont. With enough patience, almost anything CAN be done with this program, and for all the work they put into the user-interface, they found enough time to do excellent display routines. The documentation is sufficient (downright good when compared to the manuals of many ST applications) and the program can be 'mastered' in a relatively short time (this is not to say that their arent enough features, for I have really no complaints about that). It is probably worth the \$80, PROVIDED that they continue to support it with new versions (like maybe one for the blitter in the new Megas (pant pant drool)). If you want an animator, definitely check this one out.

-Martin Doudoroff (Highlander)



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## Hints & Tricks

by John DeMar

### 1) Saving the GEN Desktop

I always see an ST booted at a store and can't believe how messy they keep their Desktop. I shouldn't be too critical -- the top of my desk is pretty hard to find! The "Option" Menu on the GEN Desktop has a choice called "Save Desktop". It creates the file called "DESKTOP.INF" which remembers what your Desktop looks like (icon and window positions, screen resolution, etc). The next time you turn on your computer, the Desktop display will look just as you left it. For instance, I have my disk icons placed at the bottom left of the screen and the trash can at the bottom right. I resize and move my windows so that they are equality centered vertically next to each other (text viewing). Go to the Option Menu and Save the Desktop. Next time I boot, everything looks familiar and comfortable to me!

### 2) Renaming the Icons

I've found it more appealing to have the disk icons named "Top Disk" and "Bottom Disk", to correspond to the physical position of my disk drives. Point to a disk icon and click the bottom to make it dark (selected). Go to the Options Menu and select "Install Disk Drive". Type in the new name in the drive name field and click on the Install button. Voila! Your icon is renamed. If you save the Desktop, the name will be there permanently. You can rename the trash icon by loading the DESKTOP.INF file into a text editor and renaming it where it is shown in its special format. If you do this with ST-Writer, make sure the top and left margins are set to zero, then print to disk (do not use Save since ST-Writer uses a different format).

### 3) Installing an Application Document-Type

This sounds complicated but it's really a useful feature. For instance, you probably name all of your ST-Writer files with a file extension ".DOC". Normally, you would load ST-Writer then load the document file. Here's how to do it in one step! On the Desktop, click once on the application program name (or icon) to make it black (selected). Go to the Option Menu and choose "Install Application". In the field called Document Type, enter the three characters for the file type associated with the application (DOC, for the case of ST-Writer). Then, save the Desktop to make this a permanent choice. From now on, all you need to do is click twice on any document file (".DOC" on the name) and ST-Writer will load automatically and the document file will load into ST-Writer, waiting in the edit mode! Make sure ST-Writer is on the same disk as your document files or this will not work.

### 4) The Infamous <ESC> Key

The Escape comes in handy for a couple of things. When you remove a disk from a drive and replace it with another, the Desktop still shows the directory for the old disk. I spent the first two months closing the window and re-opening it to see the directory of the new disk. Not so! Simply press the <ESC> key and the directory will appear for the new disk! Also, the Escape key is used to erase text fields in GEN Dialog Windows. For instance, you're entering the date in the Control Panel -- just hit <ESC> and the old date will erase and the cursor will go to the beginning of the field.

### 5) The Case of the Dead Mouse

I've heard of missing mice and a sick mouse or two. But, there's no such thing as a dead mouse! The ST keyboard allows you to move the cursor around without using the little critter. Hold <Alternate> and the cursor arrow keys to move the pointer in steps and use the <Alternate> and <Shift> keys together with the cursor keys for fine movement. The <Alternate> key with the <Insert> key acts like the left mouse button and the <Alternate> key with the <ClrHome> key acts like the right mouse button. It makes a lot of sense once you think about it!

### 12) Types of Programs

The first day my ST arrived, I sat for three hours trying to make the cursor appear with 4iForth from the Dragon Group. Finally, I gave them a call and they talked me through it... install the program as a TOS application! There are four types of programs on the ST and here's a quick explanation of each: GEN APPLICATION. A GEN application is a program with a ".PRG" type at the end of the filename. This type of program uses the GEN interface or was written to enter and exit appropriately with the GEN Desktop. GEN DESK ACCESSORY. A Desk Accessory is a program, usually smaller than a full application program, that loads into memory when you turn on the computer. They remain in memory and are convenient at anytime from a GEN application through the "Desk" Menu. These programs, with a ".ACC" file type, are really multitasking programs running in infinite loops when the main application isn't busy. A desk accessory must be programmed as such and regular application will NOT work as an accessory. NON-GEN PROGRAMS. Other programs that do not make use of the GEN routines have a ".TOS" file type. They strictly use GEMDOS functions and supply their own interaction with the user. Usually, a TOS program requires a blinking cursor which is enabled automatically when the program is run. TTP PROGRAMS. A special type of TOS program has a ".TTP" file type. These programs require a list of arguments for input to the application. If you are familiar with CP/M or MS-DOS, these programs





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## ST CONTROL CHARACTERS

**CLEAR SCREEN:** ESC E Clears all characters from the screen and moves the cursor to Home position, the top-left corner of the screen. (row 1, column 1)

**CLEAR TOP OF SCREEN:** ESC d Clears the screen from Home position to, and including, the cursor position.

**CLEAR BOTTOM OF SCREEN:** ESC J Clears the screen from, and including, the cursor position to the bottom of the screen.

**CLEAR LINE:** ESC i Erases the entire line the cursor is on, and moves the cursor to the leftmost column.

**CLEAR BEGINNING OF LINE:** ESC o Erases from the beginning of the line to, and including, the cursor position.

**CLEAR END OF LINE:** ESC K Erases from cursor position to the end of the line.

**INSERT LINE:** ESC L Inserts a new blank line at the cursor position and moves all following lines down one line, and puts the cursor at the beginning of the blank line.

**DELETE LINE:** ESC M Deletes the line the cursor is on and moves all following lines up one line, adding a blank line at the bottom. Puts the cursor at the beginning of the line following the one deleted.

**MOVE CURSOR:** ESC Y row+31 col+31 The two characters that follow the "Y" specify the row and column to which the cursor is to be moved. Rows are numbered 1-25, and columns are numbered 1-80. Note: this command is four bytes long, instead of two.

**CURSOR UP:** ESC A Moves the cursor up one line. Note: this command, and the three following it, have no effect if they would move the cursor off the screen.

**CURSOR DOWN:** ESC B Moves the cursor down one line.

**CURSOR RIGHT:** ESC C Moves the cursor one position to the right.

**CURSOR LEFT:** ESC D Moves the cursor one position to the left.

**HOME CURSOR:** ESC H Moves the cursor to the Home position.

**INDEX UP:** ESC I Moves the cursor up one line. If the cursor is on the top line, a scroll down is performed.

**DISABLE CURSOR:** ESC f Causes the cursor to be invisible.

**ENABLE CURSOR:** ESC e Restores the cursor to visibility.

**SAVE CURSOR:** ESC i Saves the current cursor position.

**RESTORE CURSOR:** ESC k Moves the cursor to a previously saved position. If you use this command without previously saving the cursor, then the cursor is moved to Home position.

**INVERSE VIDEO:** ESC p Characters are displayed as background color characters on a foreground colored cell.

**NORMAL VIDEO:** ESC q Characters appear as normal.

**WORD WRAP ON:** ESC v Causes the first character past the last displayable position on a line to be placed in the first character position on the next line. The screen scrolls up if necessary.

**WORD WRAP OFF:** ESC w After the last displayable character on a line has been reached, the characters overprint; thus, only the last character received is played.

**FOREGROUND COLOR:** ESC b color Selects the color in which the character is displayed. The character "color" must be in the range 0-15. In medium resolution, you may choose from four colors; in low resolution, you may choose from 16 colors. Note: this command, and the next one, are three bytes long, instead of two.

**SET BACKGROUND COLOR:** ESC c color Selects the color of the cell that contains the characters. The character "color" is as above.

### EXAMPLES:

1) To move cursor to row 5, column 10, you would use:

ST BASIC: `PRINT CHR$(27);"Y";CHR$(36);CHR$(41);`

PASCAL: `write( chr(27), 'Y', chr(36), chr(41) )`

C: `printf("%c%c%c", 27, 'Y', 36, 41)`

2) To clear the screen, use:

ST BASIC: `PRINT CHR$(27);"E";`

PASCAL: `write( chr(27), 'E' )`

C: `printf("%c", 27, 'E')`

(The ACCESS Key wishes to thank Ric Kalford, who gleaned the above information from the Developer's Package.)



## FOR SALE

ATARI ST Developers Kit - Complete Package, purchased new in May 1987, unused, \$200.00 Barry Orlando, 1120 Deerfield Dr., Napa, CA 94558 (707) 257-2326

## EXCHANGES/REFUNDS



"As a matter of fact, it worked too well - I programmed my income, budget, and expenses and it advised me I couldn't afford to own it!"



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